

CLAIMS

1. A method of welding a sintered aluminum alloy, characterized by friction stir welding a sintered piece prepared by pressure sintering rapid-solidified aluminum alloy powder.
2. The welding method of Claim 1, wherein the sintered piece is composite material prepared by pressure sintering a mixture of rapid-solidified aluminum alloy powder with ceramic particle.
3. The welding method of Claim 2, wherein the ceramic particle has an average particle diameter of 10 μm or less.
4. The welding method defined by either one of Claims 1 to 3, wherein the friction stir welding is performed using a welding tool having a radius of shoulder within a range of 6-25 mm provided with a rotating pin of 3-10 mm in length and 3-10 mm in diameter under conditions of: a rotation rate of the rotating pin within a range of 500-3000 r.p.m., a travel speed within a range of 200-1000 mm/minute and a pushing depth of a rotator shoulder within a range of 0-1 mm.
5. The welding method defined by either one of Claims 2 to 4, wherein a welding aid, made of an aluminum alloy dispersing the same ceramic particle as in the sintered piece, is sandwiched between or mounted on the sintered pieces, and friction stir welded together with the sintered pieces.
6. The welding method defined by either one of Claims 2 to 4, wherein the sintered piece is friction stir welded together with a welding aid, made of an aluminum alloy free of ceramic particle, being sandwiched between or mounted on the sintered piece.
7. The welding method of Claim 5 or 6, wherein the welding aid has a T- or H-shaped section, a vertical wall of the T-shaped section or a web of the H-shaped section being sandwiched between the sintered pieces.
8. The welding method of Claims 7, wherein the welding aid

comprises a first part to be sandwiched between the sintered pieces and other part(s) not to be sandwiched between the sintered pieces, the first part having a ratio of ceramic particles different from the other part(s).